

**EDUCATION IN EGYPT: IMPROVEMENTS
IN ATTAINMENT, PROBLEMS WITH QUALITY
AND INEQUALITY**

Asmaa Elbadawy

Working Paper 854

November 2014

The author would like to thank Niveen El Zayat for excellent research assistance and Caroline Krafft for helpful discussions and suggestions.

Send correspondence to:

Asmaa Elbadawy

Population Council

asmaa.elbadawy@gmail.com

First published in 2014 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Copyright © The Economic Research Forum, 2014

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without permission in writing from the publisher.

The findings, interpretations and conclusions expressed in this publication are entirely those of the author(s) and should not be attributed to the Economic Research Forum, members of its Board of Trustees, or its donors.

Abstract

This paper provides a profile of education in Egypt using the Egypt Labor Market Panel Survey of 2012 and its predecessors. Both trends over time and differences by background characteristics for various education indicators are examined. Progress has been made in terms of school attendance, educational attainment and similar aspects such as dropout. However, school quality needs to be substantially improved. Attendance of private schools and universities as well as the frequent reliance on private tutoring signal that the quality of public schools is low. The evidence in this paper also points to inequality in education opportunities and outcomes. Socioeconomic background, specifically wealth and parental education, strongly affect the different aspects of education in Egypt.

JEL Classification: I2

Keywords: Education, ELMPS 2012, School Attendance, Education Attainment, Inequality of Education Opportunities

ملخص

تقدم هذه الورقة لمحة عن التعليم في مصر باستخدام المسح التتبعي لسوق العمل في مصر لعام 2012 وسابقتها. يتم فحص كل من الاتجاهات على مر الزمن والاختلافات حسب الخصائص الأساسية لمؤشرات التعليم المختلفة. وقد تم أحرار تقدم في مجال الالتحاق بالمدارس، والتحصيل التعليمي وجوانب مشابهة مثل التسرب من التعليم. ومع ذلك، فإن نوعية المدرسة بحاجة إلى تحسين كبير. وبعد كل من نسبة الحضور في المدارس والجامعات الخاصة، فضلا عن كثرة الاعتماد على الدروس الخصوصية إشارة إلى أن جودة المدارس الحكومية منخفضة. تشير الأدلة في هذه الورقة أيضا إلى عدم المساواة في فرص التعليم والنتائج. وتعد الخلفية الاجتماعية والاقتصادية، وتحديد الثروة والتربية المنزلية مؤثرات قوية على جوانب التعليم المختلفة في مصر.

1. Introduction

A country's prospects for economic growth and global competitiveness are linked to the education of its workforce. At the microeconomic level, an individual's labor market outcomes are clearly related to his or her education. For the poor, education is often the only route to achieving upward social mobility. Therefore, examining the state of the education sector is of great importance. In Egypt, there have been noticeable improvements in some aspects of education, such as enrollment levels, but the quality and relevance of education are questionable (World Bank 2008).

This paper provides an overview of education trends based on data from the Egypt Labor Market Panel Survey (ELMPS) 2012 and its predecessors in 2006 and 1998 (for detailed information on the surveys, please refer to Assaad and Krafft 2013a).¹ The Egypt Labor Market Surveys offer rich information on education that is essentially comparable across rounds. Information includes education history for those who left school and current school experience for students. However, each round evolved and contained additions and improvements compared to earlier rounds. The education modules in the 2006 and 1998 rounds covered all individuals 6 years of age and older. In 2012, only those above 6 years of age and less than 45 who had updates in their education since 2006 were asked the full education module. Respondents for whom there was already detailed education information from 2006 were not asked for this information again in 2012.

The analysis in this paper is largely focused on the school-aged population 6-17.² In some cases, the focus is on the 18-22 age-group which corresponds to post-secondary education for those who proceed beyond the secondary level and to labor market entry for vocational graduates. For the analysis on education attainment, the focus is on the age-group 25-29 which is referred to as young adults.

Except for the discussion on education attainment (see Section 2), reported 2012 figures are based on the sample of respondents answering the full education module without merging information back from 2006. It is worth mentioning that who got asked the full education module is related to an individual's educational attainment and age, which may create some non-representativeness in 2012 statistics that are based only on respondents answering the full education module. For example, students, those who finished their education after 2006 and generally young respondents, are more likely to answer the full module since their education is more likely to have changed since 2006. The analysis sample age restriction followed in this paper overcomes a lot of this non-representativeness, however. In fact, almost all of those aged less than 23 were asked the full 2012 module, making reported statistics in this paper fairly representative.

Descriptive analysis is used and all figures reported are weighted to take into account attrition and to ensure data representativeness at the national level.³ Areas covered in the analysis include educational attainment, school never-entry, preschooling, dropout, grade repetition, school quality, and school type. Trends in supplements to schooling such as private tutoring and family study help are also examined. Scores obtained at the end of the various education levels are analyzed. Both variations over time and by background characteristics are shown. Background characteristics include sex, urban/rural residence, region of residence, household

¹ Elbadawy (2009) studied trends in education using the 1998 and 2006 rounds. Whenever possible, comparisons were also made to the Labor Force Special Survey of 1988.

² The sample of 6-17 year-olds in 1998 is 6,794 while in 2006, it is 8,237. In 2012, the sample of 6-17 answering the full education module is 10,429 individuals.

³ For details on weights, please refer to Assaad and Krafft (2013a).

wealth⁴ and parental education⁵. When relevant, the analysis is also disaggregated by education level and school type.

It is worth mentioning that the evidence presented in this paper draws on bivariate relations. Multivariate analysis is needed to identify net effects instead of observed associations. For example, household wealth and parental education are linked to each other. In order to isolate the wealth effect on different education aspects, parental education and other background characteristics need to be controlled for.⁶

This paper points to improvements in accessing education and in attaining higher levels of education among Egyptian youth. Also, the gender gaps continue to close in various aspects of education. The paper provides evidence that the two areas of concern are the quality of education and inequality in accessing different education opportunities and outcomes. Socioeconomic background, such as wealth, shapes education pathways of youth. Long-term reforms are needed to enhance quality of and equity in education in Egypt.

2. Educational Attainment

Pre-university education in Egypt consists of three levels: six grades at the primary level⁷, three grades at the preparatory level and the three grades at the secondary level (**Error! Reference source not found.**). The corresponding age-groups (assuming on-time entry and progress) are 6-11, 12-14 and 15-17. The school-age population is thus 6-17. Basic education, consisting of the primary and preparatory levels, is compulsory. There is a standardized examination held at the final year of each education level. Based on the score obtained at the end of the preparatory level, a student can join one of the two secondary tracks: the vocational (technical) track or the general secondary track. The vocational track almost always leads to a terminal degree whereas the general track requires a higher score since it is the more prestigious academic track that leads to university.

The attainment indicator used in this section reflects the highest education level an individual completed successfully. I focus on changes in the educational composition of young adults aged 25-29.⁸ Younger groups may still be studying and, hence, their final attainment is not yet observed. Thus, including them will produce underestimated attainment levels. For individuals whose education information has not changed after 2006, data on attainment levels was merged from ELMPS 2006, to ensure representativeness.

In general, educational attainment has increased over time (Figure 2). The percentage of young adults with low levels of education went down whereas the percentage of young adults with higher levels of education either stabilized or increased. In the discussion below, I focus on the large education groups, namely the illiterate, those with vocational secondary degrees and university graduates. The illiterate group decreased from representing 25% of young adults in 1998 to 19% in 2006 and 17% in 2012. That means that currently close to one in five young adults do not have literacy skills, which is still a large and problematic figure. Illiteracy is more pronounced among rural young women, 29% of whom are illiterate (Figure 3). By region, rural

⁴ The ELMPS data set contains a wealth index estimated using a method similar to that developed by Filmer and Pritchett (2001) See appendix in Assaad et al. (2010) for details about the construction of the wealth index which is based on asset ownership and housing characteristics. Households are divided into five quintiles based on their wealth score value. For respondents 6-17, household wealth is likely to reflect parental wealth. However, it is possible that respondents above 18 years of age may not be living in parents' household.

⁵ The ELMPSs have information on parents' education even if they are not part of the household.

⁶ Also, in many instances, multivariate analysis needs to deal with endogeneity issues before any causal relationships are established.

⁷ In 1998, the primary level consisted of only five grades.

⁸ For details on educational attainment for the working-age population 15-64, please refer to Assaad and Krafft (2013b).

Upper Egypt has the largest share of illiterate young adults (31%). Illiteracy is also concentrated among the poor. Combining the illiterate group with those who have no degree and those whose highest education is primary education, it is concerning that over a quarter of young adults (27%) did not complete compulsory education.

The increase in vocational education was the major compositional change between 1998 and 2006.⁹ In 2012, vocational graduates still form the largest education group but their share remained constant at 37% of young adults. The share of university graduates, on the other hand, increased from 13% in 1998 to 20% in 2006 and 23% in 2012, nearly doubling between 1998 and 2012. The finding that the share of vocational education has stabilized while that of university education has increased is also observed for the working-age population 15-64 (Assaad and Krafft 2013b).

Looking closely into sources of variation in vocational and university education by sex, while the share of vocational education stabilized overall between 2006 and 2012, it slightly increased among young adult men (in both urban and rural areas) from 38% in 2006 to 41% in 2012. On the other hand, it decreased slightly among young adult women (in both urban and rural areas) from 36% in 2006 to 34% in 2012 (Figure 2, Figure 3). With respect to university education, the increase between 2006 and 2012 is largely driven by an increase among young adult women, among whom university education increased from 18% in 2006 to 24% in 2012. Among young adult men, the percentage of university graduates did not increase much.

Looking into university attendance dynamics by urban and rural residence (Figure 3), among females, the increase in university attendance is relatively larger in rural areas (increasing from 8% in 2006 to 15% in 2012).¹⁰ In urban areas, it also increased but from 31% to 37%. For young men, the slight decrease in university education for males is coming from urban areas. The share of male university graduates actually increased in rural areas from 15% to 18%. Examining university trends by region, both urban and rural Lower Egypt were the regions that experienced an increase in the share of university graduates. In urban (rural) Lower Egypt, university education increased from 24% (13%) in 2006 to 35% (20%) in 2012. In the other regions, the percentage of youth with university degrees was stable. It is young adults belonging to middle to higher wealth quintiles that enjoyed an increase in their chances of going to university between 2006 and 2012.

The group mainly triggering the increase in university degree holders is females in rural areas, particularly in Lower Egypt. The findings above seem to be supply-side driven. The establishment of several provincial public universities, several of which were established in 2005 or after,¹¹ is bringing about the increase in university attendance.¹² The availability of public universities nearby facilitates university attendance, particularly for girls who usually have mobility restrictions. Some rural girls that in the past would have opted for a vocational secondary degree are now pursuing the university track, which previously was not an option for them because it meant travelling to or residing in cities away from their homes. This explains the slight decrease in the percentage of young women with vocational degrees. The share of young adults graduating from universities did not go up in the Greater Cairo region (staying at 37%) which is the region hosting most of the newly-established private

⁹ The increase in vocational education was particularly higher among rural young women (Elbadawy 2009).

¹⁰ This is in contrast to the change over the period 1998 to 2006 where the proportion of university graduates in urban areas grew relatively more than that in rural areas (Elbadawy 2009).

¹¹ Therefore, these universities produced graduates after ELMPS 2006 was fielded.

¹² Some of the new universities were previously branches of older public universities and got separated.

universities.¹³ This suggests that the increase in university education is not driven by private university attendance.

Young adult women are generally worse off in terms of educational attainment. Females are more likely to be illiterate, which is due to never joining school.¹⁴ In 2012, 21% of young women aged 25-29 were illiterate as opposed to 12% of their male counterparts. Over time, illiteracy declined relatively more among females going down from 36% in 1998 to 26% in 2006 and 21% in 2012, whereas for males, the percentage of illiterates remained constant between 2006 and 2012 at 12%. It is good news that gender gaps continue to narrow as the improvement in attainment is relatively higher among young women. Young adult women are currently almost as likely as young men to graduate from university even though in 1998 and 2006, they were considerably less likely to do so. In urban areas, an even larger proportion of females graduated from university in 2012 (37% among females compared to 30% among males).

In the following sub-sections, the relationships between parental and own-educational attainment are discussed. Then, attention is given to particular education groups, such as those pursuing vocational education. Also, the breakdown of general secondary into arts and science specializations is examined.

2.1 Parental and own education

It is important to investigate inter-generational mobility in education as it reveals whether young adults whose parents have no or low education face unequal opportunities of achieving high levels of education and exiting poverty. The ELMPSs have the advantage of containing information on parental education even if parents are not living in the same household.¹⁵ With the education expansion taking place, the current generation is generally more educated than the last generation. As expected, more educated fathers tend to have more educated children.¹⁶ For illiterate fathers, in 2012, there is a sizeable probability (28%) that their young adult children will be illiterate themselves (Figure 4). However, the probability that their children are illiterate somewhat declined between 2006 and 2012. Consistent with the expansion in vocational education, fathers with low to mid levels of education have a probability around 40% to have children with vocational degrees. This probability declines for more educated fathers.

For illiterate fathers, the probability that their young adult children end up having university education is less than 10%. The probability increases to 25% for fathers who have primary or preparatory education. Even for fathers who finished secondary education, only about half of their young adult children will have a university degree, indicating that the upward mobility in education is not strongly present in Egypt and that there is evidence for inequality of opportunity in education. It is primarily fathers with university degrees (or above) that have children also holding university degrees with a probability of just over 80% (close to 95%). The patterns of own education by mother's education are similar to that by father's education.

¹³ In ELMS 98 and ELMPS 06, attendance of private universities is not directly identifiable. For private university figures using ELMPS 12, please refer to Section 5.1.

¹⁴ See Section 3 for details on school never-entry including policy recommendations.

¹⁵ As in the case of the education attainment indicator, parental education indicators are constructed such that information from ELMPS 2006 is incorporated for parents whose education information has not changed since 2006. In Figure 4, I omit the literate without diploma father education category due to its small sample which results in misleading conclusions, if included.

¹⁶ This association is not showing the net effect of father education on own education, though, since father education is associated with other social background factors such as wealth.

2.2 Secondary education: General versus vocational tracks

As shown above, vocational secondary graduates represent the largest education group among young adults. Vocational secondary education is almost always a terminal degree meaning that it brings an individual's educational path to a standstill and, therefore, often leads to youth exclusion from better life opportunities.¹⁷ Consistently, there is an extensive body of literature indicating that the returns to vocational education are small (El-Araby 2013; Krafft 2013; Salehi-Isfahani et al. 2009; Said and El-Hamidi 2008). On the other hand, the general secondary track mainly leads to university and is regarded as the more prestigious track. Examining access to the different secondary tracks, therefore, is crucial as it affects future career and income.

In the discussion below, I focus on the age-group 18-22 conditional on ever joining the secondary level.¹⁸ Around forty percent have joined the general track (43% in 2012). In 2012, young females are a bit more likely than males to have joined the general secondary track (47% of females compared to 38% of males), and the gap in favor of females increased compared to 2006. Generally, joining the general track is less likely in rural areas but has increased slightly over time in rural areas from 29% in 2006 to 35% in 2012. In urban areas, attendance of the general track stabilized at a bit over a half of youth 18-22. The growth in joining the general secondary track for females and for rural youth is consistent with the discussion in Section 2 where it is found that females in rural areas particularly witnessed an increase in their likelihood of obtaining university education, and therefore in their likelihood of joining the general secondary track which leads to university.

Attending the general track is strongly associated with socioeconomic status as captured by household wealth and parental education. The likelihood of joining the general track consistently goes up with wealth. In 2012, only 21% of the poorest youth 18-22 that ever joined the secondary level were in the general track as opposed to 73% of the wealthiest (Figure 5). Similarly, among youth with illiterate fathers, 21% joined the general track whereas among youth with university-educated fathers, 84% joined the general track. Rates are similar by mother's education.

In 2012, those who ever joined the vocational track are twice as likely to have been to a secondary school that operated in shifts compared to those in the general track (40% versus 19%). They were also more likely to be in poorer quality schools at the preparatory level. For example, they are more likely to have gone to a preparatory school operating in shifts or a preparatory school where physical punishment is used and less likely to have gone to a preparatory school where computers are used.¹⁹ The disparities in the likelihood of joining different tracks are stronger by socioeconomic background than by school quality.

Within the vocational track, there are several specializations including industrial, commercial, agricultural, tourism/hospitality, and nursing. The largest share of students go to the industrial

¹⁷ It is possible for graduates of the vocational track to join university if their scores on the final year are higher than a particular cutoff, in which case they can only join a university field related to their vocational specialization. However, only a negligible percentage of vocational graduates eventually join university.

¹⁸ The vocational/general secondary indicator shows whether an individual joined the general as opposed to the vocational secondary track conditional on ever joining the secondary level. In other words, it is created over the universe of individuals who progressed in the education system beyond the preparatory level and went into one of the secondary tracks. In 2012, there is a direct question identifying which secondary track an individual joined. In 2006, the secondary track is directly identifiable for secondary students and individuals whose highest attained education level is the secondary level. For graduates of university and above intermediate institutes, if they report a vocational secondary specialization, they are considered among those that attended the vocational track. For university graduates not reporting a vocational specialization at the secondary level, they are assumed to have attended the general secondary track. This is a realistic assumption since the overriding majority of students in universities attended the general track in the past.

¹⁹ For details on school quality, refer to Section 4.1.

specialization (55%) followed by commercial (32%), then agricultural (10%). There are clear gender differences in vocational specializations. Fifty one percent of females 18-22 that ever joined the vocational track have been in the commercial vocational specialization as opposed to 18% of their male counterparts. On the other hand, 39% of females went to industrial vocational education compared to 67% of males.

2.3 General secondary specializations: Arts versus Science

In the final year of the general secondary track, students select a specialization. The specializations are normally broken down into arts and science and affect the university discipline youth later join. Students who studied arts at the general secondary level cannot study science at the university level. Science disciplines at the university level generally require higher scores for admission and are viewed as more prestigious.

In the discussion below, I focus on the age-group 18-22 that ever went to general secondary using the 2012 survey. The majority of this group attended arts (66%) while a third (34%) attended science.²⁰ Young women are more likely to join arts but the difference is not big (70% of females versus 63% of males). The chance of joining science is higher in urban areas (38% versus 28%). The largest differences in the chance of attending different general secondary specializations are along socioeconomic lines. Only 17% of the least wealthy youth join science whereas 42% of the wealthiest do so (Figure 6).

The composition of general secondary over-represents the wealthiest youth, as a result of the different chances of ever attending general secondary and the different chances of attending arts versus science by wealth. Youth from the wealthiest fifth of households constitute 54% of those attending science, while youth from the poorest fifth of households represent only 4%. As for arts, the wealthiest represent 37% while the poorest represent 9%. In addition, there are comparable differences by parental education.

3. School Never-Entry

As discussed in Elbadawy (2009) and Krafft (2011), there have been substantial improvements in school attendance rates, accompanied by narrowing gender gaps in attendance. However, there remains a disadvantaged group of the population that is at risk of never attending school. Children that never attend school today will suffer from illiteracy, poor labor market outcomes and lasting poverty in the future. Girls residing in rural Upper Egypt are more likely to be among this group.

I focus on never-entry to school among children aged 10-17.²¹ As shown in Figure 7, never-entry to school decreased over time from 9% in 1998 to 5% in 2006, reaching 2% in 2012. Over two-thirds of those that never went to school are girls. Consistent with past findings, females in rural areas, especially rural Upper Egypt continue to be the most likely never to join school. In 2012, 8% of rural Upper Egyptian girls never went to school. This group constitutes over half of children 10-17 that never went to school. Adding boys, close to 70% of those that never went to school reside in rural Upper Egypt. Not only is rural Upper Egypt the region with the largest concentration of children that never went to school, but its share has slightly increased over time.

In addition to sex and regional differences, there are also large differences in never-attendance by wealth and parental education. For example, five percent of children 10-17 living in households belonging to the bottom wealth quintile never go to school compared to 0.1%

²⁰ The arts and science indicators are created over the universe of individuals who ever joined the general secondary track. The science group includes those whose specialization was science or mathematics.

²¹ Delay in school entry is not uncommon in Egypt. Therefore, I exclude those 6-9 years of age since some of them may eventually go to school. Including late-entrants in the analysis will lead to an over-estimation of the extent of school never-attendance.

among the top wealth quintile. Similarly, those with illiterate parents are more prone not to go to school (5%). Over 70% of children 10-17 that never went to school have an illiterate father or mother.

3.1 Reported reasons for never attending school

Individuals that never went to school reported the main reason why they did not (Table 1). School never-entry is not driven by supply-side factors. Among those aged 10-17, school unavailability and school distance were rarely cited as the main reason for never going to school. In 2012, the most cited reasons are “parents not wanting to” and “traditions,” particularly for girls. “Parents not wanting to” is the reason why about 40% of girls 10-17 never went to school and “traditions and culture” represent an additional 17%. The “parents not wanting to” can indicate that parents are not valuing education. This could be linked to the parents being uneducated themselves since as discussed above, a large majority of children that never joined school have illiterate parents. However, qualitative evidence may be needed to fully understand what makes parents reluctant to send their children to school. Schooling costs are also frequently cited. One in five boys who never went to school did so because of schooling being expensive.

3.2 Literacy skills and literacy programs

Youth who never attend school will not acquire literacy skills unless they join literacy programs. It is, therefore, crucial to see how many of them were able to join illiteracy eradication classes and obtain reading and writing skills and, hence, get a chance for a better future.²² Since the government-provided literacy classes target adults, I look at the likelihood of taking literacy programs among those 18-22 years of age. Only 12% of 18-22 year olds that never went to school took literacy classes. Only a third of them obtained a literacy certificate (completed the literacy program and passed the literacy test). Only 1% of 18-22 year olds that never went to school and did not go to a literacy class reported knowing how to read and write. Thirty-six percent knew how to do a simple arithmetic operation.²³ Over half of 18-22 year olds that never went to school and attended literacy classes reported knowing how to read, write and do an arithmetic operation. While this suggests there is a positive effect of going to literacy classes, it also signals there is room for literacy program improvement.

Primary education is assumed to provide reading and literacy skills. In fact, the official literacy certificates are equivalent to completing primary education. Therefore, I look at reading and writing skills among youth 18-22 that dropped out before completing primary education and did not go to a literacy class since they may not have had a chance to fully acquire and retain literacy skills. Forty percent of these youth reported they know how to read, 27% of them reported knowing how to write and 70% of them knew how to make a calculation. This indicates that more emphasis is needed on providing literacy skills in Egyptian primary schools.

3.3 Policy recommendations for literacy

In addition to policies inducing school entry for at-risk children around school entry age, informal education programs are needed for children who passed school entry age without joining school. The low percentage of youth attending literacy classes indicates that those that do not join school will not find a chance to gain unearned literacy skills and, therefore, more

²² The Egypt labor market surveys have information on reading and writing abilities. Specifically, individuals who never went to school (and in 2012, those who did not complete compulsory education) self-report whether they can read a letter or the newspaper, whether they can write a letter and whether they can do a simple arithmetic operation for example addition and subtraction. I also focus on information in 2012.

²³ The fact that more youth know how to do an arithmetic operation than read and write is not surprising. Illiterate people in Egypt learn addition and subtraction through everyday commercial transactions.

needs to be done to reach out to them. As shown, non-school entrants are spatially concentrated and hence they could be effectively targeted.

Several informal education programs have existed in the recent years but were primarily implemented as pilot projects and did not have a wide coverage. The impact of these programs needs to be evaluated so that the most effective programs are scaled-up and implemented at the national level.²⁴ Incorporating some form of monetary or in-kind incentives is crucial to boost demand and offset cost disincentives.²⁵ Conditional cash transfers (CCT) schemes with a condition to send children of school age to school and those who passed school entry age without joining school to an informal education program are one good strategy.²⁶ In a systematic review of the effect of transfers on schooling outcomes, Baird et al. (2013) found that transfers, particularly conditional transfers improved enrolment and school attendance. They also found that programs that rigorously monitor and enforce conditionalities have a stronger effect on enrolment.

A design element that could be incorporated in informal education programs is for them to target both illiterate parents and their children. As discussed above, most of children not joining schools have illiterate parents. Also, a large percentage of them report that they did not join school because their parents did not want them to. Providing literacy for parents can, thus, provide a solution.

4. School Quality, Dropout and Grade Repetition

4.1 School quality

Attending a multiple-shift school, computer use and physical punishment are the three quality indicators used to capture school quality at each level attended.²⁷ The multiple-shift indicator means the school attended does not operate in a single shift.²⁸ The computer use indicator shows whether students were able to use computers frequently at school.²⁹ The physical punishment indicator reflects frequent exposure to physical punishment at school.³⁰

In the analysis on school quality, I focus on students aged 6-17. Since similar patterns were found in quality indicators across the different education levels (i.e., in primary, preparatory and secondary schools), the discussion below focuses on quality indicators in primary

²⁴ An example of a literacy and social support program with an impact evaluation is the Ishraq program, which was implemented by the Population Council. This program targeted out-of-school adolescent girls in rural Upper Egypt. For information about the impact evaluation, please refer to Elbadawy (2013).

²⁵ In-kind incentives can include school meals and meals to participants in informal education programs. Another in-kind incentive is to provide or subsidize transportation to schools and informal education programs in areas with a spatial concentration of children at risk of not joining or dropping out of school.

²⁶ A pilot CCT was implemented in Ain-El-Sira neighborhood in Cairo (Pathways of Women's Empowerment RPC 2011). Later, the pilot was scaled up and implemented in two Upper Egyptian governorates. Badawy (2011) provides recommendations on CCT implementation measures to curb error, fraud, and corruption.

²⁷ The computer use and physical punishment indicators are only available in 2006 and 2012. ELMS 1998 contains information only on primary schools. The ELMPSs do not contain information on other school quality aspects or on students' perceptions of quality and relevance of the education they receive.

²⁸ Some schools operate in (two or three) shifts as opposed to a single shift to accommodate a volume of students that exceeds school capacity which may negatively affect school quality since the school day tends to be shorter and school facilities may be overused.

²⁹ This indicator only captures if computers are used at school but does not necessarily mean they are used for educational purposes. It is constructed such that it takes the value one if an individual used computers at school either sometimes, frequently or daily, and the value zero if he/she never used computers at school or only used them rarely.

³⁰ It takes the value one if an individual attended a school where students were exposed to physical punishment either sometimes, frequently or daily, and the value zero if physical punishment was rarely or never used.

schools.³¹ In 2012, close to a third of students aged 6-17 (previously or currently) attended primary schools that operated in shifts (Figure 8). The percentage of shift school attendance declined over time, from over 40% in 1998 to 35% in 2006 and 29% in 2012. As for computer use, in 2012, 57% of students that currently or previously attended primary schools used computers at school, a slight improvement over 2006. In regards to physical punishment, over 75% of students 6-17 were in primary schools where physical punishment was used. This is an alarming figure showing physical punishment is the usual method of discipline at school. The decrease in physical punishment was not large since 2006, when it was 84%.

No gender differences exist with respect to the quality of attended school.³² Higher quality primary schools are slightly more available in urban areas compared to rural areas on all three measures. Differences are large by wealth and parents' education across all rounds. In 2012, 35% of the poorest students went to primary schools that operated in shifts, whereas among the richest only half this percentage (17%) went to such schools. As for computer use, 50% of students in the poorest households and those whose parents are illiterate attended primary schools where computers were used, while 70% of the richest and those whose parents are university-educated were in such schools. The same pattern holds in the case of physical punishment, 86% of children belonging to the poorest households are in schools where physical punishment is used whereas among children belonging to the richest households, only 57% go to such schools.

In addition, there is also variation by school type, which is itself related to socioeconomic background. Computer use is more prevalent in private schools, particularly in foreign language schools (85%) and experimental public schools (85%) compared to regular public schools (55%). With respect to physical punishment, private schools and experimental public schools have noticeably less of it compared to regular public schools. Azhari (religious) schools have physical punishment levels that are comparable to regular public schools.

4.2 Dropout

A good education system should deliver quality education equitably and efficiently. Dropout and grade repetition mean limited resources are not used efficiently since they raise the cost of educating a given number of children. Dropping out of school also means that children are leaving schooling without acquiring the skills they need. Dropout rates are examined among youth 18-22 that ever went to school. Younger ages will not have had the time for their full pre-university education path to be observed including at which point they dropout, if they dropout. Two dropout definitions are employed. The first definition shows the percentage of those who left school without completing a particular education level among those that ever went to school (Figure 9). This definition is not conditional on entering that education level. The second definition looks at the percentage of those who left school without completing a particular education level conditional on joining that education level (Figure 10). The two definitions yield identical figures for dropout before completing the primary level since all those who ever joined school must have joined the primary level. The first definition shows the extent of dropout cumulatively. Therefore, the probability of dropout increases for higher education levels.

As shown in both Figure 9 and Figure 10, dropout rates have generally declined over time. Dropout before completing the primary level decreased from 7% in 2006 to 3% in 2012. Dropout before completing the preparatory level, i.e. before obtaining compulsory education, decreased from over 20% in 1998 to 10% in 2012. Eighteen percent of those that join school

³¹ The variation in the incidence of shift schools and computer use by education level is not strong. Physical punishment is less observed at the secondary level since physical punishment is less effective for older children.

³² Except for physical punishment, which is slightly more prevalent among boys.

leave school before completing the secondary level in 2012. In other words, 82% of the age-cohort 18-22 that entered school survived until completion of pre-university education. Conditional on joining a given education level, the likelihood of dropping during the primary, preparatory and secondary levels in 2012 is 3%, 5% and 3%, respectively. While dropout during both the primary and preparatory levels decreased, the extent of the reduction in the likelihood of dropout was stronger in the primary level, particularly in rural areas. The dropout rate during the secondary level, given the secondary level is reached, increased (Figure 10).³³ This may be driven by the rise in survival into schooling which means academically weaker students may be staying longer in school and dropping out at higher education levels compared to the past.

As shown in Figure 9 and Figure 10, girls are not disadvantaged in terms of dropout. In fact, they are a bit less likely to dropout compared to boys at the various education levels. Differentials in dropout are mainly by urban/rural residence as well as parental education and household wealth. Focusing on unconditional dropout before completing preparatory education in 2012, the probability of dropout in rural areas is 13% while in urban areas, it is 7%. As in the case of school never-entry, dropout is most prevalent in the region of rural Upper Egypt, where it reaches 17% while it is less than 10% in all other regions. By wealth, close to one in five of youth belonging to the poorest quintile drop out before obtaining compulsory education while only 1% of youth belonging to the richest quintile do so. Similarly, more than 15% of youth whose parents are illiterate will drop out before completing compulsory education while the chances for youth whose parents have university education are nil.

4.2.1 Reported reasons for dropout

In the discussion below, I focus on the primary reason of dropout for those aged 18-22 that left school before completing the preparatory level i.e., compulsory basic education (Table 2). The reason cited the most is “individual not wanting to complete schooling,” which is reported by at least a third of dropouts in all rounds. In 2012, 47% had this as their primary dropout reason. This reason is relatively more cited by males. However, there are no differences by urban/rural residence. The second set of most mentioned reasons is related to costs. The direct cost of school fees and uniform is mentioned by over 10% of dropouts, and this percentage is higher in rural areas. In 2012, having to help at home (largely for females) combined with family work outside home (largely for males), drove about 15% of dropout cases. These responses signal that dropout is because of the opportunity cost of schooling for individuals whose time is needed to assist their families. Direct and indirect costs, therefore, are behind about 35% of dropouts in 2012. For females, another 16% is caused by parents not wanting them to continue schooling.

The reported reasons for dropout before completing compulsory education in 2012 were generally in harmony with reported reasons in 2006. Among the changes that occurred over time is the reduction in citing repetitive failure as driver of dropout from 14% in 2006 to 5% in 2012. On the other hand, more girls reported “parents not wanting them to continue school” which increased from 10% in 2006 to 16% in 2012, and “marriage” which increased from 4% in 2006 to 6% in 2012.

Knowing what drives children “not to want to continue school” calls for qualitative evidence to probe into why this is the case and identify the course of action needed to prevent dropout. It could be because their academic performance is poor either due to their limited innate abilities or inadequate quality of school. There is an association between dropping out of school and repeating grades, supporting the view that poor academic performance can be a precursor

³³ The increase in dropout incidence before completing the secondary level is not driven by changes in the composition of secondary education attendees by track. It is found that dropout increased for both the general and vocational secondary branches.

to dropout. In 2012, 31% of those that left school before completing their preparatory education previously failed a grade while only 20% of those that did not leave school repeated a grade. Also, those who dropped out before completing preparatory education had lower scores at the end of the primary level compared to those that did not drop out (65% versus 81% on the primary final exam). Dropouts are also less than half as likely to have supplemented schooling with tutoring compared to those who did not drop out. In 2012, 22% of youth 18-22 who dropped out before completing preparatory education took tutoring in the past while 57% of youth that did not drop out took tutoring.

Attending a good quality school decreases the chances of dropping out. Focusing on dropouts before completing compulsory education among youth aged 18-22 in 2012, dropouts are more likely to be in schools operating in shifts. Thirty-five percent of dropouts are in shift-schools compared to 28% of those that did not drop out. Forty-one percent of dropouts are in schools where computers were used compared to 48% among those that did not drop out. Similarly, 83% of dropouts were in schools where students are exposed to physical punishment compared to 68% of non-dropouts. There is also an association between dropping out before completing the preparatory level and the quality of school attended at the primary level.

Since finding school academically challenging could be driving a lot of dropout, policies should target at-risk students with learning supplements before they leave schools. A better school environment offering quality education is also generally helpful for preventing dropout. In addition, as discussed above, direct and indirect costs seem to play an important role in triggering dropout. As recommended for policies to deal with school never-entry (Section 3), using cash or in-kind incentives along with a conditionality to keep children at school could be useful to prevent dropout. Efforts to help those that dropped out already to go back to school or to get them to participate in informal education programs are also important.

4.3 Grade repetition

Grade repetition has efficiency costs since it means that getting a student to acquire a given level of education costs more. In the literature, grade repetition is increasingly attributed to school failure more than individual failure. As in the case of dropout, I focus on the age-group 18-22 that ever joined school to allow them to have sufficiently progressed towards the completion of the pre-university education system.³⁴

In 2012, among youth aged 18-22 that ever went to school, 21% repeated a grade. The same percentage was observed in 2006. Not only did the level of grade repetition remain unchanged since 2006 but also the patterns of repetition by background characteristics did not change. Girls were less likely (14% in 2012) than boys (28%) to have ever repeated a grade. Geographical differences are small. Greater household wealth and parental education decrease the chances of grade repetition (Figure 11). Twenty-nine percent of youth belonging to the poorest quintile repeated a grade while only 14% of the richest did so. A quarter of youth with illiterate parents repeated a grade while only 10% of those with university-educated parents did so. The wealth gradient exists at the primary and preparatory levels but reverses at the secondary level. This may be explained by a phenomenon where poor students that are more likely to repeat drop out of school before the secondary level while the academically-strong poor remain in school. On the other hand, wealthy students regardless of their academic performance remain in school. Additionally, youth that went to a higher-quality school were less likely to have ever repeated a grade.

³⁴ Information on grade repetition is only available in the 2006 and 2012 surveys.

5. Additional Learning Support

Households in Egypt follow several strategies to support their children's learning and to help them obtain higher scores. These strategies include investing in private schools, investing in private tutoring and providing study help to their children.

5.1 School type

A large majority of students in Egypt attend public schools. Public schools are divided into regular and experimental schools, where the latter are only a small percentage of public schools and are generally thought to be of higher quality than the former. Experimental schools charge tuition fees that are higher than regular public schools but less than that charged by private schools. In 2012, among students 6-17 years of age, 3% attended experimental schools while 81% attended regular public schools at the primary level (**Error! Reference source not found.**). A minority of families send their children to private schools. Private schools are divided into regular private schools and (foreign) language private schools, where the language of instruction is not Arabic. All of the above school types are supervised by the Ministry of Education. Al-Azhar religious schools, on the other hand, are supervised by the Supreme Council of Al-Azhar but are monitored by the Egyptian Prime Minister. The curriculum of Azhari schools is mainly religious but also contains non-religious subjects. Azhari schools cover the primary, preparatory, and secondary levels and are called "institutes".³⁵ There are currently private Azhari schools, some of which also offer foreign language instruction.³⁶

In 2012, around 85% of students attend public schools at all education levels. Most of those that attended public schools were in regular public schools. Those in private schools were more likely to be in regular private schools as opposed to language private schools.³⁷ Attending Azhari schools is more common than attending private schools.

On average in 2012, students aged 6-17 pay about 220 L.E. per year in tuition fees.³⁸ Generally, the tuition fees in public and Azhari schools are only nominal, most probably just representing administrative fees. Tuition fees are higher in private schools where language private schools fees are, on average, around double of that in regular private schools. Focusing on fees at the primary level among students 6-17, the mean tuition fees paid are 235 L.E. By school type, the mean tuition fee level is 50 L.E. in regular public schools, 75 L.E. in Azhari schools, 752 L.E. in experimental public schools, 1728 L.E. in regular private schools and 3457 L.E. in language private schools. Tuition fees are higher at higher education levels particularly in private schools.

At higher education levels, attending public schools increases while attendance of private schools decreases, indicating a switch from private to public schools. Parents are particularly keen on placing their children in good schools at the primary level where the basis for learning is laid down. Moreover, children that join high-quality schools such as experimental public schools and language private schools tend to stay there at higher education levels. Also, those who choose religious education tend to stay.

Patterns of attending private schools by background characteristics are examined below. While levels are different by education level, similar patterns by background characteristics hold. In

³⁵ Graduates of Azhari secondary schools are eligible to join Al-Azhar University. Also, graduates of non-Azhari schools can join Al-Azhar University.

³⁶ In ELMS 98, information on the type of school attended is only available for primary schooling. The focus in this section is on current students aged 6-17.

³⁷ While ELMPS 2012 identifies attendance of international schools, the sample attending international schools is negligible.

³⁸ The mean tuition fees is 60 L.E in public schools, 780 L.E. in experimental public schools, 1750 L.E. in regular private, 4000 L.E. in language private and 90 L.E. in Azhari schools.

2012, around 7% of students 6-17 attended private schools at the primary level. No gender differences are found in the incidence of going to private schools. Private schools are more concentrated in urban areas particularly in Greater Cairo. In urban areas, 16% of students 6-17 attend private primary schools and in Greater Cairo, a quarter of them do so. Stark differences exist between the rich and the poor in terms of private school attendance. Close to a third of students whose households belong to the wealthiest quintile attended private primary schools. On the other hand, less than 1% of students belonging to the poorest wealth quintile attended private primary schools. There are similar patterns by parents' education. Figure 12 shows that the share of private schools has not increased over time. Even with the restriction to urban areas and to Greater Cairo, private school attendance did not increase between 2006 and 2012, but increased between 1998 and 2006.³⁹

A number of private universities were established in the recent years. Four percent of those that ever joined university aged 18-22, attended private universities.⁴⁰ Unlike pre-university schools, there are gender differences in terms of attending private universities. Six percent of young males aged 18-22 that went to university attended private universities while only 3% of their female counterparts do so. Naturally, with private university being expensive, there is a strong wealth effect: less than 1% of the poorest who attend universities at all attend universities that are private while 14% of the richest do so. Attending private universities is not common in rural areas. Two percent of rural youth aged 18-22 that went to university attended private universities whereas 9% of their urban counterparts did so.

The share of Azhari schools increased over time.⁴¹ Focusing on Azhari schools at the primary level among students 6-17, the share of Azhari students rose from 3% in 1998 to 7% in 2006 to 9% in 2012. Attendance doubled in all regions between 1998 and 2006. Between 2006 and 2012, attendance stabilized or slightly increased in Upper Egypt and in rural Lower Egypt. While the share of Azhari attendance remains lower in urban areas, the increase between 2006 and 2012 was relatively higher in urban areas (from 3% to 5%) compared to rural areas (from 10% to 12%). As shown in Figure 13, Alexandria and Suez Canal were the urban regions experiencing the largest rise in Azhari attendance (from 1% in 2006 to 6% in 2012) followed by urban Lower Egypt (from 3% in 2006 to 6% in 2012).

Azhari attendance decreases by wealth. However, the wealth gap narrowed in 2012 as attendance of Azhari schools increased relatively more among richer children. In 1998, 5% of the poorest attended Azhari schools while 1% of the richest did so. In 2012, the respective figures are 11% and 9%. Similar patterns by urban residence and wealth hold with respect to attendance of Azhari schools at the preparatory level. The larger rise in attending Azhari primary schools in urban areas and regions as well as among richer children may be driven by the growth in the supply of private Azhari schools in urban areas and the shift in preferences towards religious education. As for Azhari secondary schools, the percentage attending such schools also increased overall from 4% to 10%. Unlike for primary and preparatory Azhari schools, the rise in secondary Azhari schools is large in both urban and rural areas. Also, the

³⁹ When looking at the trends of private school attendance over time, experimental schools are lumped to regular public schools, and language schools are lumped to regular private schools due to their small sample.

⁴⁰ To get a sense of private university attendance over time, I looked at the incidence of attending private universities for the following age cohorts (18-22, 23-27, 28-32, 33-37). While the figures for older groups are not necessarily statistically representative, they indicate there was an increase in attendance of private universities over time.

⁴¹ The increase in Azhari school attendance found using ELMPS data is consistent with other sources. For example, based on the 2013 Statistical Yearbook of CAMPAS, the number of enrolled students in primary Azhari education increased by about 60% between 2001/2002 and 2011/2012, reaching about 1.2 million students. The number of students enrolled in public schools increased by only 20%.

increase holds for children belonging to different levels of wealth. There seems to be a growth in the availability of Azhari secondary schools in rural areas as well as in urban areas.

5.2 Tutoring

Private tutoring is a subtle form of privatization of education. In Egypt, test scores exclusively determine the track an individual joins at the secondary level and determine access to university and field of study within university. An exam-driven education system coupled with inadequate school quality, induce investment in tutoring to supplement learning at school and ensure children obtain the highest scores possible. Focusing on students 6-17 years-old, almost half of them (49%) took private tutoring in 2012 with a slight increase from 2006 where 46% took tutoring.⁴² Over 50% of students 6-17 also took tutoring in previous years.

Private tutoring is common at all education levels and it increases at higher pre-university education levels. In 2012, among primary students 43% took private tutoring while among preparatory students, 61% took tutoring. At the general secondary levels with exams leading to university, the percentage taking private tutoring is 73%. Even among vocational secondary students who do not need the investment to pass standardized exams leading to university, over a third resort to tutoring. At the university level, 22% of university students that are 18-22 years old take private tutoring.

The mean yearly spending on private tutoring among students 6-17 in 2012 is 800 L.E. Spending on tutoring rises at higher education levels. In 2012, the mean spending on tutoring among primary students is around 550 L.E. per year. It goes up to close to 1,850 L.E. per year per student among general secondary students. Two thirds of students (67%) that took private tutoring did so with one of their teachers at school. To get a sense of the intensity of taking tutoring, close to 70% of those who took tutoring did so over the entire school year. This holds across different education levels and different school types. Eighty percent took private tutoring in two subjects or more. The number of subjects in which a student gets tutored increases at higher levels of education. Ninety percent of general secondary students took tutoring in at least three subjects.

As is known in the Egyptian society and as shown in previous research, private tutoring is quite widespread geographically and among different socioeconomic groups. No gender differences in the likelihood of taking private tutoring or in yearly spending on tutoring are observed, consistent with previous research (Elbadawy et al. 2007; Elbadawy 2009). Tutoring is more common in urban areas (54%) but is still also common in rural areas (46%). As in 2006, tutoring is most widespread in Lower Egypt in both its urban (73%) and rural (62%) parts.

There is a strong gradient in tutoring by socioeconomic status represented by household wealth and parents' education. Among the wealthiest students, 61% take private tutoring while among the least wealthy, 34% do so (Figure 14). Similarly, 58% of students whose father has university degrees take tutoring while 34% of students whose father are illiterate take tutoring, with similar patterns by mother's education. The fact that over a third of the poorest households find themselves having to pay for tutoring for their children shows how tutoring has become a burdensome and unavoidable education expense. It also signifies that "free" education is not so free as it is intended to be. Tutoring aggravates inequality of opportunity in education.

Not only are the well-off more likely to pay for tutoring, they also get tutoring services that are more expensive and of higher quality. In 2012, students from the richest quintile spent on average 1400 L.E. per year on private tutoring while students from the poorest quintile spent

⁴² An alternative form of tutoring in Egypt is called group tutoring which is tutoring classes provided officially by schools outside school hours for a fee that is lower than that charged by private tutors. Usually, the number of students in group tutoring is larger than in private tutoring. Group tutoring is not as popular as private tutoring and has actually declined since 2006 from 15% to 9%.

on average around 400 L.E per year. The rich are also more likely to get tutored more intensively. In 2012, 36% of the wealthiest students take private tutoring in 5 subjects or more while 21% of the poorest do so.

Looking at variation in private tutoring by school type, it is found that private tutoring is common and increasing over time for almost all school types. Private tutoring is not less prevalent among students in private schools where teaching is expected to be of higher quality making students less in need to resort to tutoring. Similarly, tutoring is not less common among students in private universities. This may be because of a wealth effect whereby students in private schools are wealthier⁴³ and afford tutoring more than others, offsetting the school quality effect. Private tutoring is not more common among students in lower quality schools. Again, while these students are expected to need tutoring to compensate for the lower quality of instruction, there could be an offsetting wealth effect whereby students in lower quality schools are poorer⁴⁴ and, therefore, less likely to afford tutoring.

5.3 Family study assistance

In Egypt, parents often help their children with studying. In 2012, focusing on school-aged students 6-17, over 40% of students got study help. The percentage of students getting study help declines as they progress through the education system. Fifty-five percent of primary students get help in studying while 31% of preparatory and 28% of secondary students do so. This is not because they need help less but rather because family members are not able to help them with content that is more advanced. Sixty-three percent of students who received study help were helped by their mother, while fathers helped in 11% of the cases. However, as the education level rises, mothers assist less and fathers assist more with schoolwork. For primary students who got study help, 66% were helped by mothers and 10% were helped by fathers. For general secondary students, 51% were helped by mothers and 25% were helped by fathers.

Over time, the incidence of study help has increased but only very slightly. In terms of patterns of receiving study support by background characteristics, there are no gender disparities. Study help is more common in urban areas (57%) than in rural areas (37%). This is expected as parents in rural areas are less educated. There is a strong effect by parental education and wealth but the parental education effect seems to be stronger. Eighty percent of children whose mother has a university education get study help, whereas only 15% of children whose mother are illiterate get study help, with similar patterns by father's education. Seventy percent of the wealthiest children get help in schoolwork while 21% of the poorest get study help.

There is some evidence that learning support strategies are not substitutable. Families use multiple learning support strategies at the same time. Children receiving private tutoring are not less likely to get study help. Also, families that send their children to private schools are not less likely to provide study help even though private schools are thought to be of higher quality. Like private tutoring, study help is not more common among students in lower quality schools. Students in lower quality schools are more likely to have less educated parents who cannot provide study help even though these students may need help more due to the lower quality of instruction at school.

5.4 Preschool

There is evidence that early childhood education has positive effects on educational attainment and labor outcomes such as wages (Berlinski et al. 2008; Hazarika & Viren 2013 and UNESCO, 2006). Going to preschool in Egypt is not standard among all children that enter

⁴³ Refer to the discussion on school type by wealth in Section 5.1.

⁴⁴ Refer to discussion on school quality by wealth in Section 4.1.

school. Parents choose to invest in preschool as a form of education support to their children.⁴⁵ Preschool is often linked to school type. For example, preschool is the default in language private schools. The discussion below presents information on attending preschool (nursery or kindergarten) conditional on school entry for those aged 6-17. Forty-four percent of those that ever went to school 6-17 were preschoolled, with no gender bias against females. Preschool attendance is more common in urban areas. Sixty-two percent of students 6-17 that live in urban areas went to preschool while only 32% of their rural counterparts did so. Consistently, metropolitan regions are the regions where preschool is most prevalent, with over 70% of students having gone to preschool. In rural Upper Egypt, students 6-17 are least likely to have gone to preschool (20%).

There is also a strong wealth effect where chances that the richest have gone to preschool are more than three times of that of the poorest. Twenty percent of the poorest attended preschool whereas 74% of the richest did so (Figure 15). A similar gap by parents' education exists. The incidence of joining preschool is higher among older age cohorts, indicating preschool attendance increased over time. This is consistent with Krafft (2011). Half of students aged 6-11 were pre-schooled while 38% and 33% of students aged 12-14 and 15-17 were pre-schooled, respectively. Preschools are not typically publically-provided (Krafft 2011). Consistently, preschool is most common among students who later attend language private schools (97%) followed by experimental public schools (90%) and regular private schools (86%). It is least common among students who attended regular public (41%) and Azhari schools (37%).

6. Test Scores

Test scores can be used to measure learning outcomes but rather imperfectly since they are affected by socioeconomic background. For example, children whose parents invest in higher quality schools and private tutoring may get higher scores, other things being equal. Respondents are asked about the scores they obtained on standardized tests at the end of the primary, preparatory and secondary levels, if they attended these levels.⁴⁶ In the analysis below, the scores are reported for those aged 18-22 whether they are still studying or not.⁴⁷ The results in this section should be taken with caution due to recall issues.⁴⁸ The mean primary score is 80% while the mean preparatory score is 75% and the mean general secondary score is 80%. Variations in scores by background characteristics are examined. Girls consistently outperform boys by about 3 percentage points at all education levels. Scores are generally higher in urban areas and in urban regions. There are also disparities by wealth and parental education indicating that children from disadvantaged backgrounds face unequal opportunities and outcomes. The mean primary level score is 72% for the poorest and 86% for the richest (Figure 16).⁴⁹

⁴⁵ Krafft (2012) discusses impacts, costs and benefits of early childhood care and education in Egypt.

⁴⁶ Information was collected on scores only in the 2012 round.

⁴⁷ This is to ensure that respondents who attended the secondary level are old enough to get a score.

⁴⁸ A sizeable percentage of respondents do not recall their scores. The recall problem is more pronounced for events that took place further in the past, in our case the primary level score. Sixty-five percent of those aged 18-22 do not recall their primary level score, while 49% do not remember their preparatory score and 28% do not recall the secondary score. Those that do not recall scores are relatively over-represent rural areas and regions, have illiterate parents and are poorer. They are also slightly more likely to be males. These patterns hold for recall at the different education levels.

⁴⁹ The score gap becomes smaller at the general secondary level. Weaker students may be dropping out or getting tracked into the vocational secondary track leaving only the academically strong poor in the general secondary track.

There is a positive relation between school quality and scores among students 6-17 (Figure 17).⁵⁰ At the primary and preparatory levels, being in a school that does not operate in shifts is associated with getting a score higher by about 3-4 percentage points. Similarly, being in a school where computers are used is associated with getting a score higher by about 2 percentage points, and being in a school where there is no physical punishment is associated with getting a score higher by about 3-4 percentage points.

Consistent with the positive relation between school quality and scores, there is an even stronger association between school type and scores. At the primary and preparatory levels, children attending experimental public schools or private schools have an advantage of at least 10 percentage points over those in regular public schools.⁵¹

I also looked at the relation between scores and getting study help among students 6-17 and there seems to be a strong positive relationship between getting study help and scores. This illustrates that study help is used by households to support learning and improve learning outcomes. At the primary level, youth who got study help got higher scores on average (84% compared to 79%). At the preparatory (secondary) level, youth who got study help got an average score of 84 (95) compared to 74 (77) among those that did not. Also, there seems to be an association between scores and tutoring. In 2012, among students in the first year in university, those that took tutoring in previous years had a secondary score higher by about three percentage points.⁵² One note of caution is that further analysis is needed to identify causal relationships between socioeconomic background, school quality, tutoring, study help and scores due to the inter-relatedness of these various factors. Socioeconomic background could actually be driving scores. However, since it also drives the investment in better school quality, school type and tutoring, this can result in observing a positive relation between scores and these investments.

7. Population Pressure on the Education Sector

Egypt has been witnessing a substantial youth bulge, a period in which youth represent a relatively large population group compared to other age-groups. Assaad and Krafft (2013b) provided a discussion on the beginning of a demographic trend in Egypt referred to as the 'echo' of the youth bulge. The 'echo' trend currently observed has occurred as a result of the youth forming the youth bulge transitioning into family formation and parenthood and is reflected in the increase of the child population growth rate from 1% per year over the period 1998-2006 to about 4% per year over the period 2006-2012 (Assaad and Krafft 2013b). The acceleration was stronger in urban areas (where growth rates increased from 0.2% to 4.5%) relative to rural areas (where growth rates increased from 0.8% to 3.4%).

I calculate average annual population growth rates of children 0-14 broken down to the 0-5, 6-11, 12-14 age-groups which correspond to future entrants to primary schools, preparatory schools, and secondary schools, respectively (Figure 18). In addition, the growth rate is calculated for those aged 15-17 corresponding to future university entrants. This breakdown is helpful for policymaking as it shows demand for schools at the different education levels.

The population 15-17, which had negative growth rates to start with, had an intensified slowdown in their growth, which signals that post-secondary education institutions will not immediately suffer from population pressures. However, all age subgroups of children 0-14 witnessed an increase in their growth rates and the group 6-11 witnessed the relatively largest

⁵⁰ At the secondary level, only 6 students age 6-17 reported scores. That is why the secondary level is excluded from the discussion.

⁵¹ At the secondary level, no students in experimental public or private schools reported scores and, therefore, a comparison of scores by school type is not possible.

⁵² The sample of university students in their first year is small and should be taken with caution (N=134).

increase. The age-group 0-5 also witnessed a large increase. Accordingly, the pressure already started on primary schools and the pressure will even increase as the cohort aged 0-5, in 2012, begins to enter school. The large-sized cohorts entering school represent an important development in the education sector, and should be kept in mind when designing education policies.

8. Conclusions

The education situation in Egypt has improved in terms of access to education. Near-universal enrollment in the primary level has been achieved. Gender gaps have generally narrowed, and in many education aspects, gender parity is observed. Girls seem to even outperform boys on some measures as they are less likely to repeat grades, more likely to join the general secondary track and seem to generally obtain higher scores. The only area where girls are worse off than boys is school entry and consequently literacy rates.⁵³ Once the school never-entry bottleneck is passed, girls are not at a disadvantage.

Currently, the major challenge in the education sector is quality. Expansion in access to education was not accompanied by an improvement in quality. According to the Global Competitiveness Report for 2013-2014 (World Economic Forum 2013), Egypt ranked 145th out of 148 countries on the following education-related indicators: quality of educational system, quality of math and science education and quality of management schools. It ranked last with respect to quality of primary education.⁵⁴ In the Trends in International Mathematics and Science Study (TIMSS), Egypt ranked as 38th out of the 48 countries participating in TIMSS in 2007 based on the average score on the mathematics achievement test for 8th graders (based on Gonzales 2008). School quality is important as it affects education pathways and outcomes. This paper provides some evidence on this effect. For instance, there seems to be a negative relation between school quality and school dropout and grade repetition. In addition, there is also a positive relation between school quality and scores obtained at the end of the various education levels. School quality is also positively associated with joining the general secondary track as opposed to the vocational secondary track.⁵⁵

An exam-driven system where scores exclusively determine education pathways, coupled with inadequate quality, have pushed households to invest in different forms of learning support to supplement schooling, making education costly despite being “free.” Households frequently resort to private tutoring, choose private schooling and provide study help to their children. This has led to a situation where the poor cannot provide the same level of education support to their children as the well-off, resulting in serious inequality of opportunity in access to education and, as a result, in education outcomes. Household wealth and parental education were consistently found to be the factors along which children and youth differed the most in terms of school entry, attending preschool, dropout, grade repetition, quality of school, attendance of private schools, taking private tutoring, and receiving study help. Wealth and parental education are also strongly associated with joining the general secondary track as opposed to the vocational secondary track, with joining the science specialization within the general track, and test scores. The education system is perpetuating inequality rather than helping poor children and youth escape out of poverty. A vicious cycle is created where the rich get better education and therefore better labor market outcomes and future income.

Since poorer students are more likely to be tracked into vocational secondary education, the vocational track effectively serves as a vehicle for the exclusion of the socio-economically

⁵³ As mentioned above, girls were also less likely to attend private universities.

⁵⁴ It is worth mentioning that the indicators are based on the opinion of businessmen on their country compared to the rest of the world.

⁵⁵ However, as pointed out above, further evidence is needed to isolate net effects. Socioeconomic background could be the actual driver.

disadvantaged from higher education. In that regard, secondary tracking should be reconsidered. The several vocational education reform initiatives do not seem to have paid off yet. Even though public higher education is free, not only are those from poorer backgrounds less likely to join it (Assaad forthcoming), they are also less likely to join university fields that are in high demand (Krafft and Elbadawy forthcoming). This means that public resources used to provide free higher education are not used efficiently as they virtually subsidize the education of the rich at the expense of the poor.

By reducing inefficiencies currently present in the education sector, some resources can be re-allocated towards improving education quality. Some of the inefficiencies result from considerable rates of dropout and grade repetition. Also, both more equity and efficiency could be achieved if free higher education is replaced by a system targeting the poor with scholarships and loans and giving universities the ability to charge tuition for those who can afford it. Substantial resources could be utilized in this way to enhance the quality at both the pre-university and higher education levels (Assaad forthcoming; Krafft and Elbadawy forthcoming).

In addition to reducing inefficiencies to free up resources that could be used to improve quality, reforms need to be adopted such that teachers and school incentives are aligned with the objective of providing quality education, for example linking pay to the quality of instruction. An important point to make is that while previous policies were successful in expanding access to education, maintaining this gain is expected to be challenging due to population growth pressures. There is a larger cohort of children and young people needing seats at schools and universities as they grow up resulting from the ‘echo’ of the youth bulge. This means that not only would there be an urgent need for policies to improve quality but also, there is still a need for policies and funds to secure seats in schools for current and future cohorts.

References

- Assaad, (forthcoming). Equality for All? Egypt's free public higher education policy breeds inequality of opportunity. In *Does free education in Egypt lead to equality of opportunity?*, ed. A. Elbadawy, and C. Krafft. Cairo: Population Council.
- Assaad, A., and C. Krafft. 2013a. The Egypt labor market panel survey: Introducing the 2012 round. *IZA Journal of Labor & Development* 2:8.
- Assaad, A., and C. Krafft. 2013b. The evolution of labor supply and unemployment in the Egyptian economy: 1988-2012. ERF Working Paper no.806.
- Baird, S., F.H.G. Ferreira, B. Özler, and M. Woolcock. 2013. Relative effectiveness of conditional and unconditional cash transfers for schooling outcomes in developing countries: A systematic review. *Campbell Systematic Reviews* 2013(8):1–124.
- Badawy, A. F. 2011. *Conditional cash transfer in Egypt: The need for proper financial and administrative controls*. M.A. Thesis, American University in Cairo.
- Berlinski, S., S. Galiani, and M. Manacorda. 2008. Giving children a better start: Preschool attendance and school-age profiles. *Journal of Public Economics* 92, 1416–440.
- El-Araby, A. 2013. Economics of Egypt's tertiary education- public vs. private and fairness and efficiency considerations. In *Is there equality of opportunity under free higher education in Egypt*, ed. A. Elbadawy [in Arabic]. New York, NY: Population Council.
- Elbadawy, A. 2013. Evaluating the impact of Ishraq: A second chance program for out-of-school rural adolescent girls in Upper Egypt. ERF Working Paper.
- Elbadawy, A. 2009. Education at a glance: Selected indicators based on the Egypt Labor Market Surveys of 1988, 1998 and 2006. In *Egypt labor market revisited*, ed. R. Assaad. Cairo: American University in Cairo Press.
- Elbadawy, A., R. Assaad, D. Ahlburg, and D. Levison. 2007. Private and group tutoring in Egypt: Where is the gender inequality? ERF Working Paper no.429.
- Gonzales, P., T. Williams, L. Jocelyn, S. Roey, D. Kastberg, and S. Brenwald. 2008. Highlights from TIMSS 2007: Mathematics and Science Achievement of U.S. Fourth- and Eighth-Grade Students in an International Context (NCES 2009–001) Revised. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Hazarika, G., and V. Viren. 2013. The effect of early childhood developmental program attendance on future school enrollment in rural North India. *Economics of Education Review* 34, 146–61.
- Krafft, C. 2013. Is school the best route to skills? Returns to vocational school and vocational skills in Egypt. Minnesota Population Center Working Paper Series.
- Krafft, C. 2012. Is early childhood care and education a good investment for Egypt? Estimates of educational impacts, costs, and benefits. Survey of Young People in Egypt Policy Brief Series.
- Krafft, C. 2011. Education. In Survey of Young People in Egypt Final Report. Cairo: Population Council.
- Krafft, C., and A. Elbadawy. Forthcoming. Access within the higher education system: Evidence for more inequality of opportunity. . In *Does free education in Egypt lead to equality of opportunity?*, ed. A. Elbadawy, and C. Krafft. Cairo: Population Council.

- Pathways of Women's Empowerment RPC. 2011. Case study: Conditional cash transfers in Egypt. Brighton, UK.
- Said, M., and F. El-Hamidi. 2008. Taking technical education seriously in MENA : Determinants, labor market implications and policy lessons. Economic Research Forum Working Paper Series.
- Salehi-Isfahani, D., I. Tunali, and R. Assaad. 2009. A comparative study of returns to education of urban men in Egypt, Iran, and Turkey. *Middle East Development Journal* 1(2):145–87.
- UNESCO. 2006. *Educational for all global monitoring report 2007: Strong foundations: Early childhood care and education*. Paris, France: UNESCO.
- The World Bank. 2008. *The road not traveled: Education reform in the Middle East and North Africa*. Washington, DC: The World Bank.
- World Economic Forum. 2013. *Global competitiveness report 2013-2014*. Retrieved January 8th, 2014 from http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf

Figure 1: Structure of the Egyptian Education System

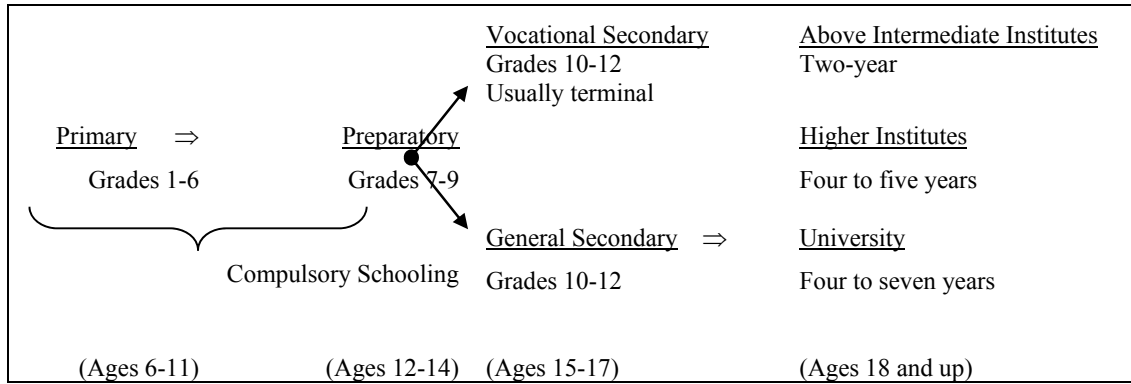
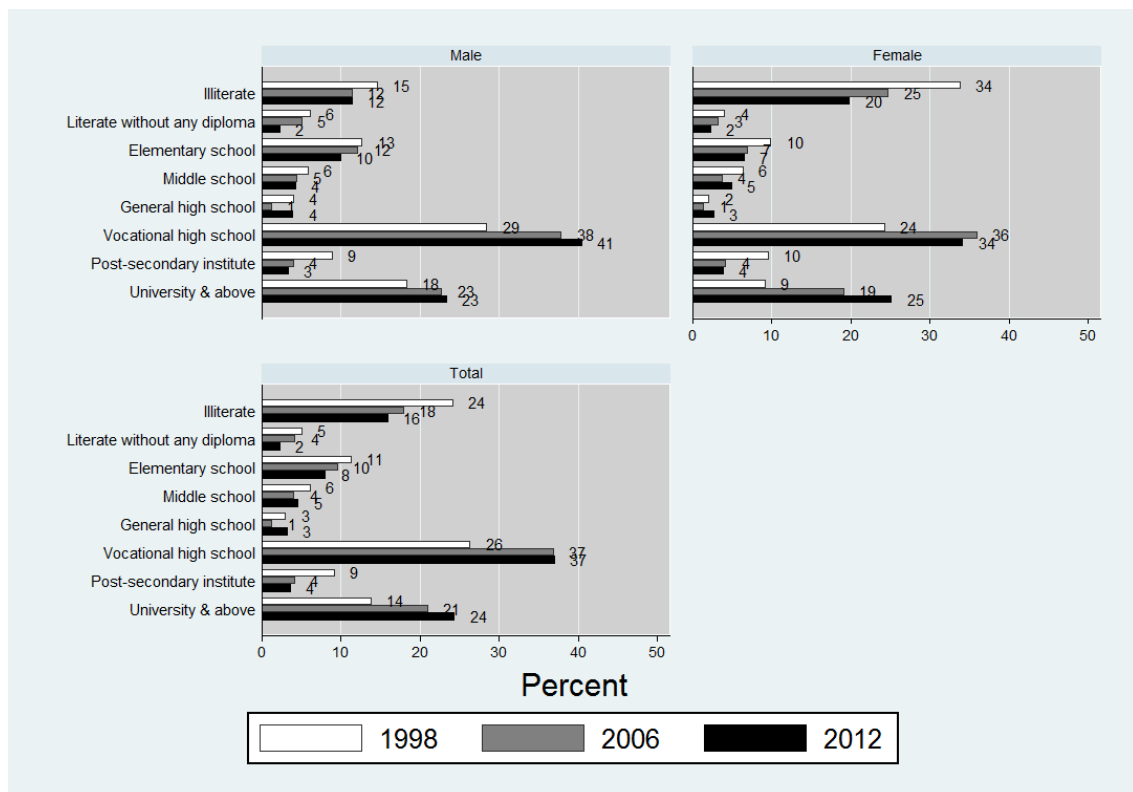
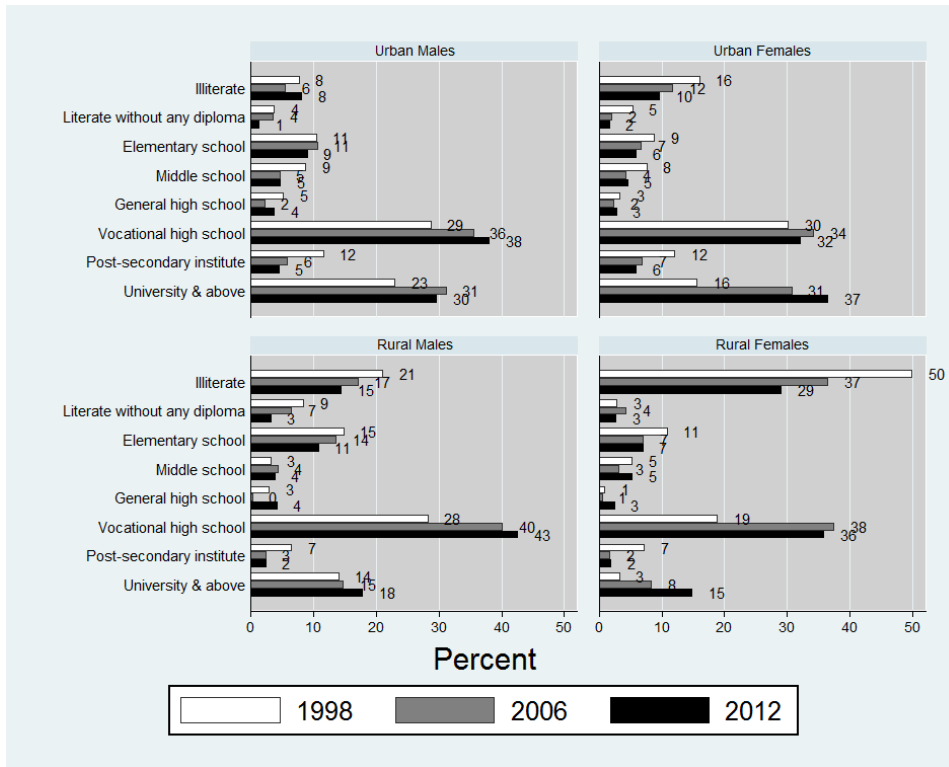


Figure 2: Distribution of Young Adults, Ages 25-29, by Educational Attainment and Sex, 1998-2012



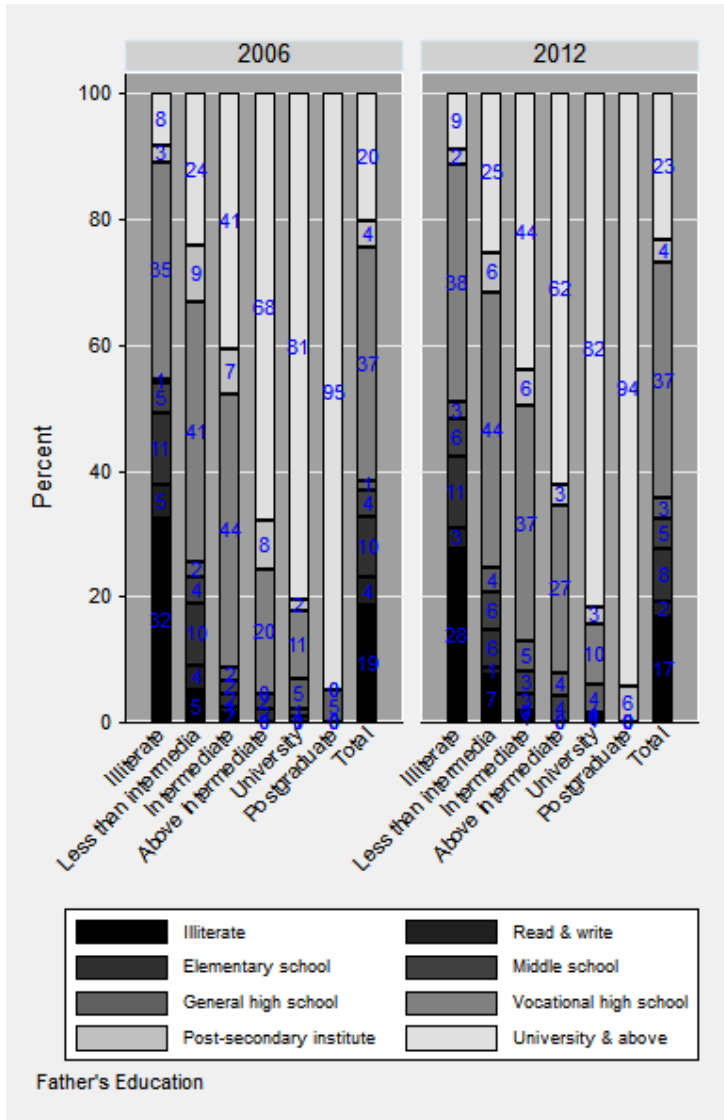
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 3: Distribution of Young Adults, Ages 25-29, by Educational Attainment, Sex and Urban/Rural Residence, 1998-2012



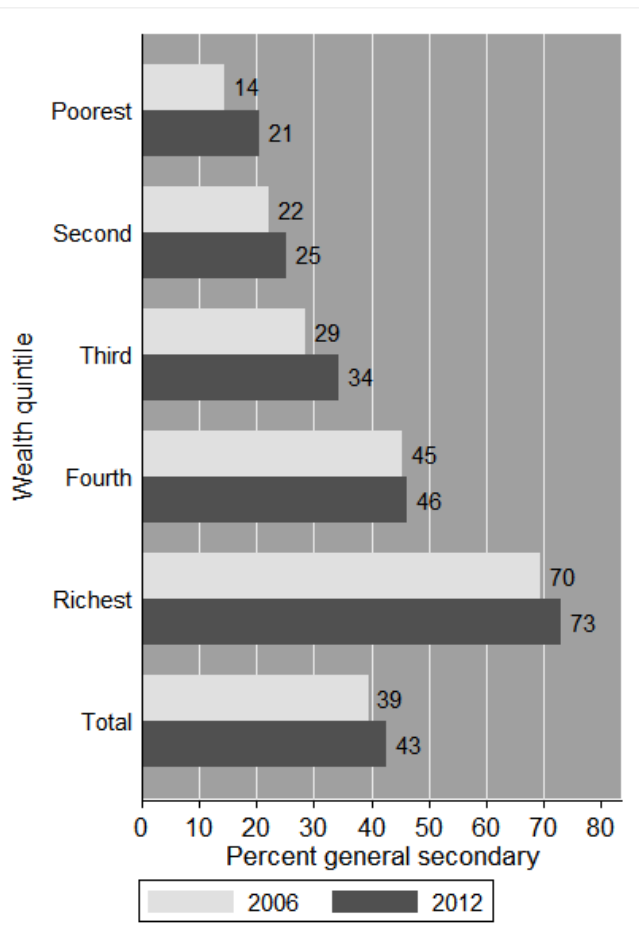
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 4: Education of Young Adults 25-29 by Father's Education, 2006, 2012



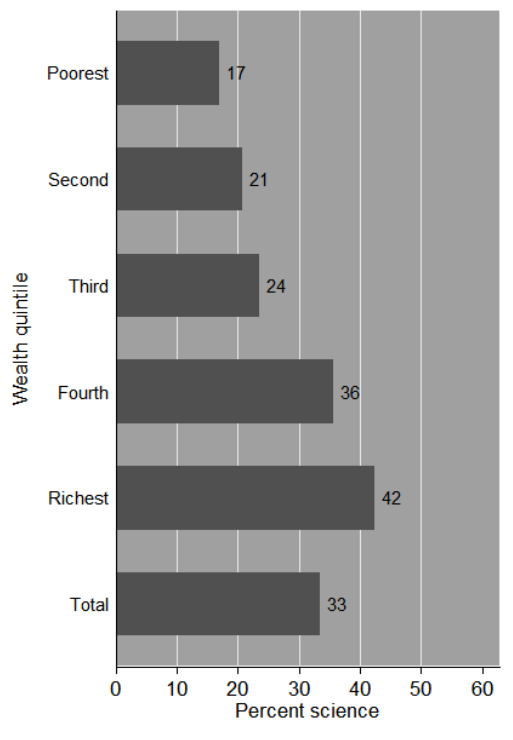
Source: Author's calculations based on ELMS 1998, ELMPs 2006 and ELMPs 2012

Figure 5: Percentage Attending the General Secondary Track by Wealth Conditional on Joining the Secondary Level, Aged 18-22, 2006-2012



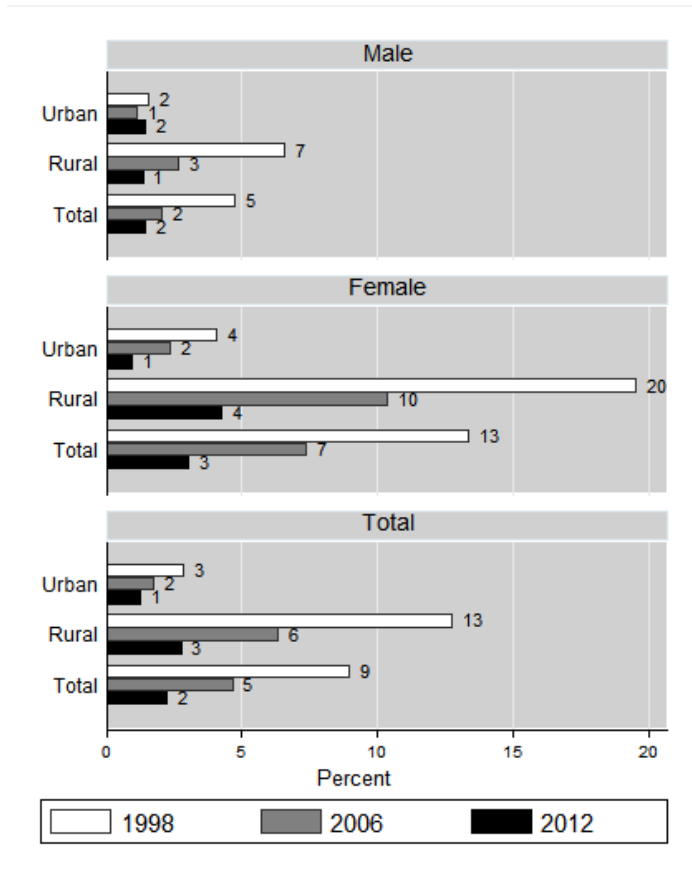
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 6: Percentage of Youth Joining the Science Specialization by Wealth, Conditional on Joining the General Secondary Track, Ages 18-22, 2012



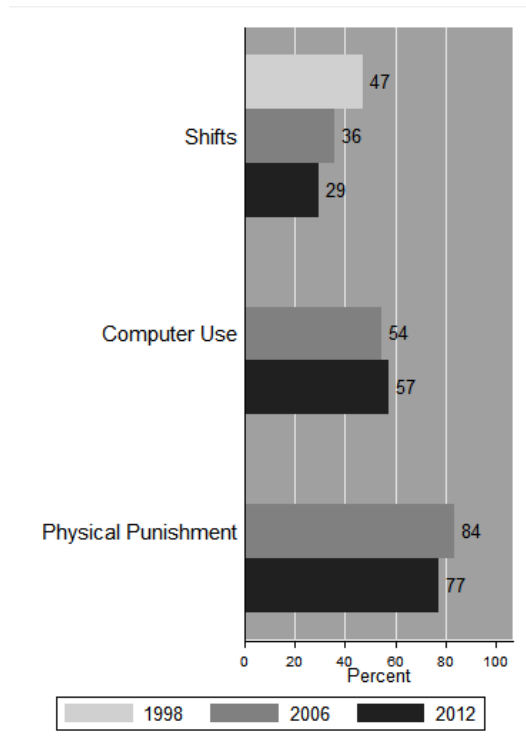
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 7: Percentage Never Attended School, Ages 10-17, by Urban/Rural Location and Sex, 1998- 2012



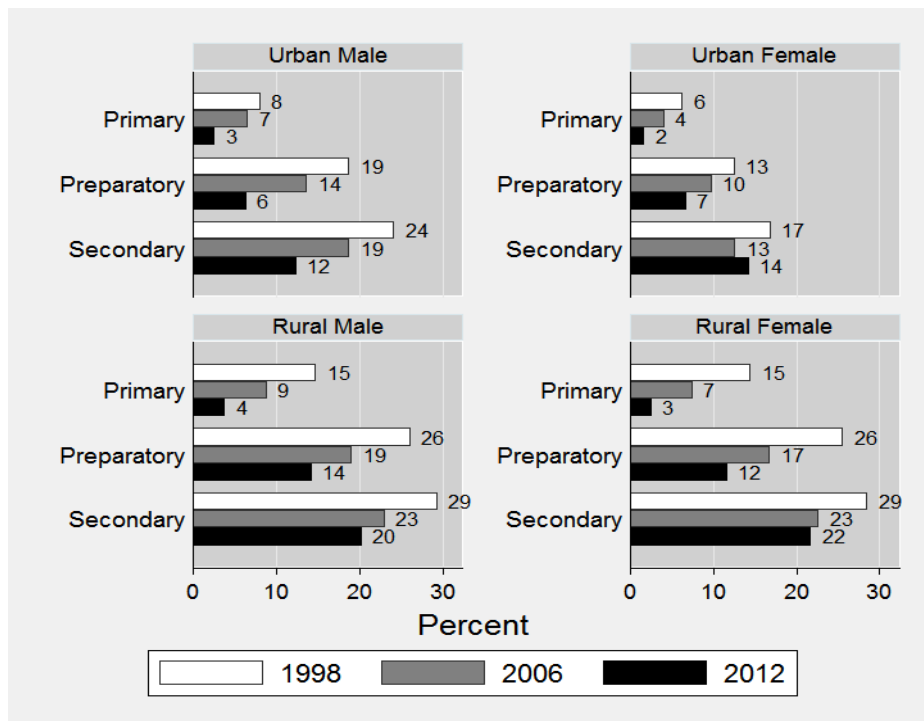
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 8: School Quality at the Primary Level among Students 6-17, 1998-2012



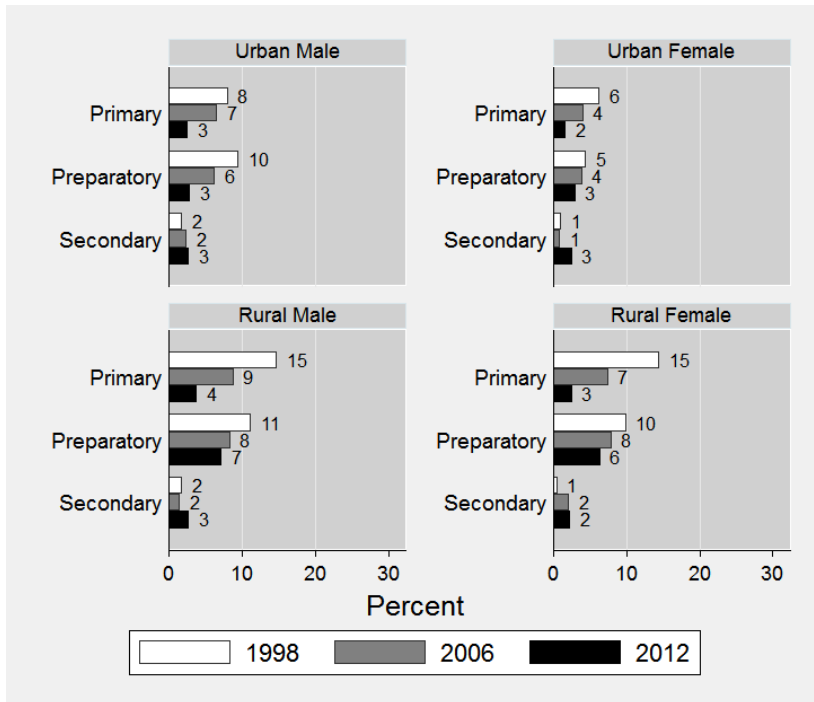
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 9: Percentage of Dropouts before Completing Different Education Levels, among 18-22 year olds that Ever-Went to School, 1998-2012



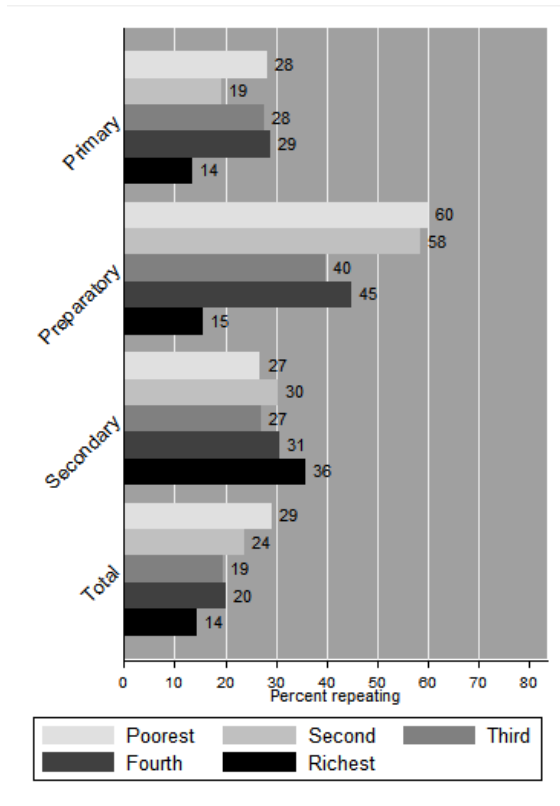
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 10: Percentage of Dropouts before Completing Different Education Levels, Conditional on Joining Particular Levels, Age 18-22, 1998-2012



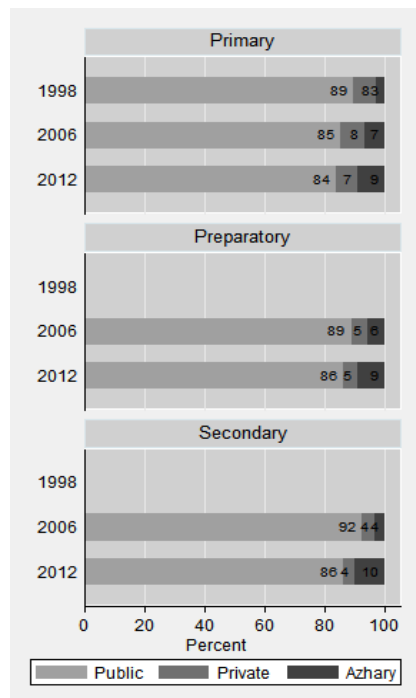
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 11: Ever Repeating Grades by Wealth and Education Level Conditional on Ever Joining School, Ages 18-22, 2012



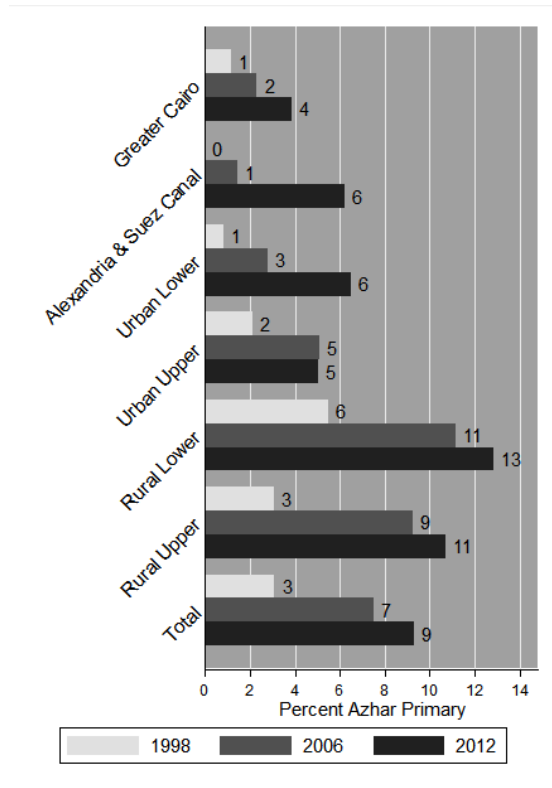
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 12: School Type among Students 6-17, 1998-2012



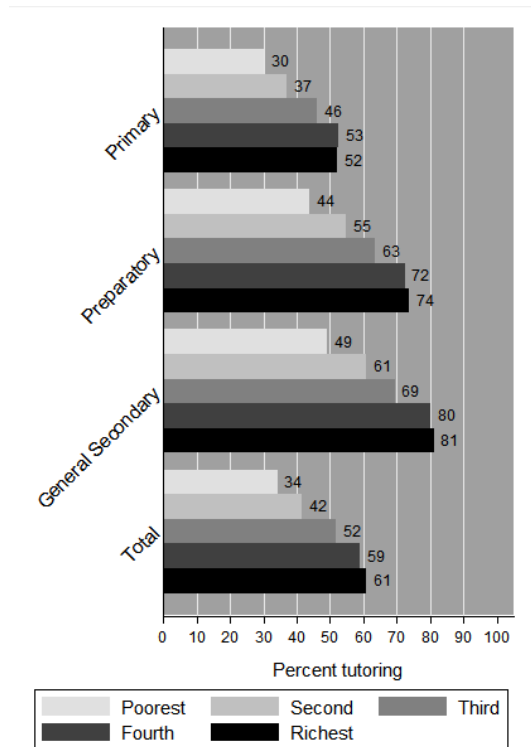
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 13: Percentage of Primary Students Attending Azhari Schools by Region, Aged 6-17, 1998-2012



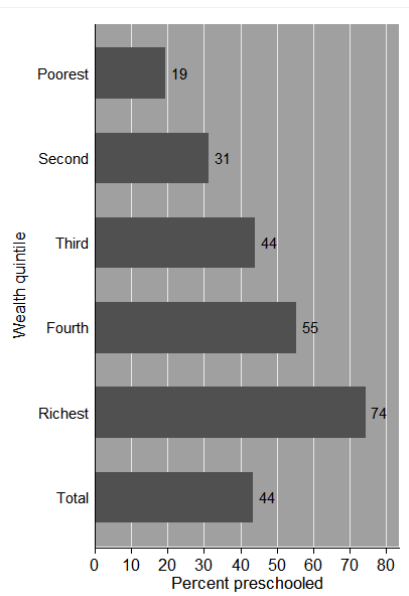
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 14: Private Tutoring among Students 6-17 by Wealth Quintile, 2012



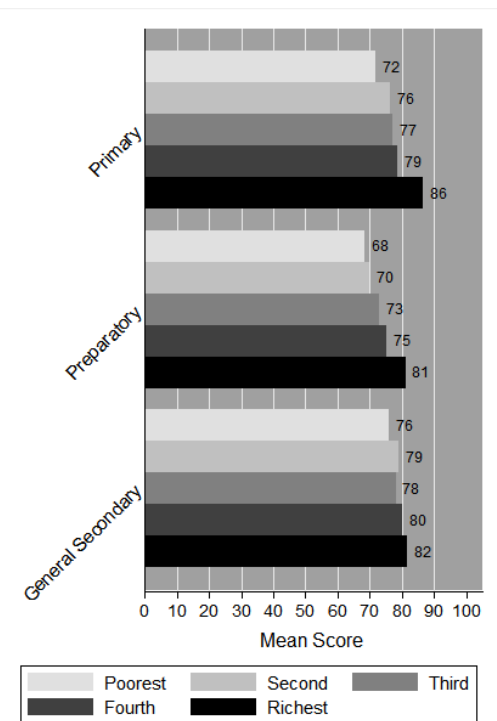
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 15: Percentage of Children Preschooled by Wealth, Conditional on School Entry, Ages 6-17, 2012



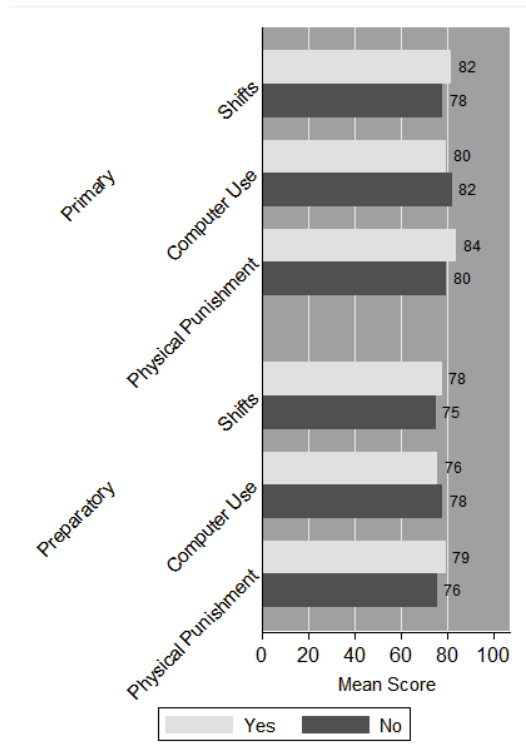
Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Figure 16: Mean Scores by Wealth Quintile and School Level, Ages 18-22, 2012



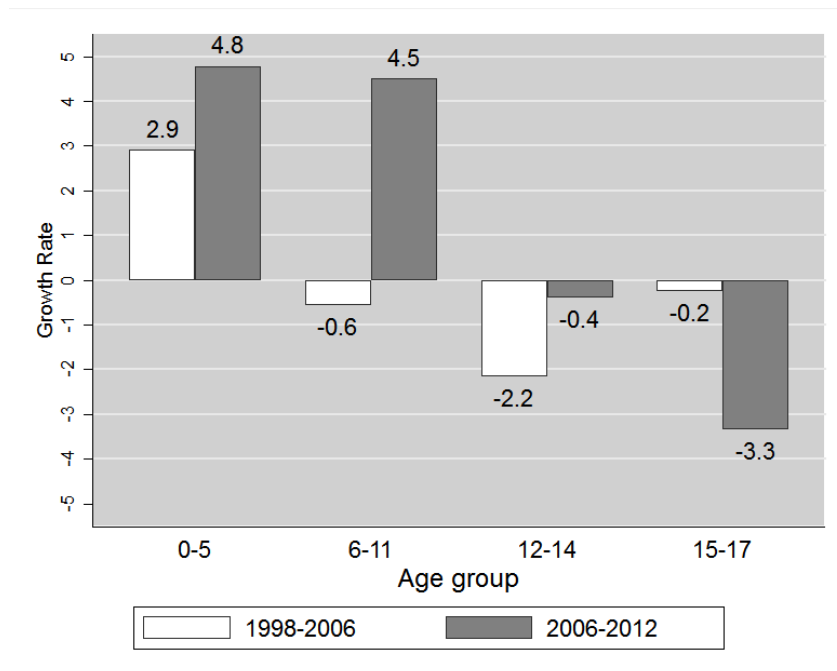
Source: Author's calculations based on ELMPS 2012.

Figure 17: Mean Scores by School Quality among Students 6-17, 2012



Source: Author's calculations based on ELMPS 2012.

Figure 18: Child Average Annual Population Growth Rates, 1998-2006 and 2006-2012



Source: Author's calculations based on ELMPS 2012.

Table 1: Primary Reasons for Never Attending School, Age 10-17, By Sex, 1998-2012

	1998			2006			2012		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Too young	0	0	0	n.a.	n.a.	n.a.	0	0	0
Passed the age of joining school	7	3	4	3	1	1	2	0	1
No available school/school too far	0	0	0	2	1	2	0	0	0
Expensive	32	23	26	20	15	16	22	12	15
Had to work with/outside family	6	1	2	15	2	5	5	0	1
Had to help at home	4	8	7	0	8	6	4	12	9
Individual did not want to	12	13	13	36	13	18	15	10	11
Parents did not want to	27	27	27	8	36	30	18	39	32
Traditions and culture ⁵⁶	0	20	14	0	14	10	0	17	11
Other ⁵⁷	12	5	7	15	10	11	35	11	19
N	88	242	330	62	188	250	53	113	166

Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Table 2: Primary Reason for Dropout before Completing Preparatory Education, Ages 18-22, by Sex, 1998-2012

	1998			2006			2012		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Completed education	0	0	0	0.3	1.4	0.8	1.3	0.4	0.9
No available schools for more educ./too far	0	0	0	0.2	0	0.1	3	0.9	2
Cost of school fees, uniform and private tutoring	12.8	8.2	11	8.3	8.5	8.3	9.7	13.6	11.5
Had to help at home	1.6	12.8	6	0.9	10	4.8	3.4	11.4	7
Had to work with/outside the family	16.9	1.6	10.9	12.9	2	8.2	14.8	0.3	8.3
Individual not wanting to complete schooling	41.2	33.2	38	56.8	47.6	52.9	50.8	43.3	47.4
Parents did not want to	2.7	13.8	7.1	1.5	10.3	5.3	3	15.9	8.9
Repetitive failure	20.7	13.6	17.9	16.5	11.1	14.2	6.4	3.5	5.1
Maltreatment of teachers	3	5.6	4.1	1	3.7	2.2	5	3.5	4.3
Prevent mixing with opposite sex/teachers are males	0	2	0.7	0.6	0.2	0.5	0	0	0
Marriage	0	2.3	0.9	0	3.5	1.5	0	6.2	2.8
Other ⁵⁸	1.1	7	3.4	1.2	1.7	1.4	2.7	1	1.9
N	285	173	458	331	265	596	203	200	403

Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

Table 3: Distribution of Students 6-17 by School Type, 2012

	Primary	Preparatory	Secondary
Public	81	84	84
Experimental Public	3	2	2
Private	5	3	2
Language Private	2	2	2
Azhari (religious)	9	9	10
Total	100	100	100

Source: Author's calculations based on ELMS 1998, ELMPS 2006 and ELMPS 2012.

⁵⁶ "Teachers are mostly males" was lumped under "traditions and culture".

⁵⁷ In 1998 and 2012, the "other" category includes disability.

⁵⁸ In 1998, the "other" category includes disability.